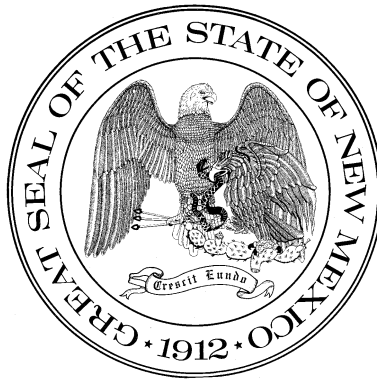


RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE



REPORT to the FIFTIETH LEGISLATURE

December 2011
Legislative Council Service

SUMMARY

SUMMARY OF THE RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE INTERIM 2011 WORK

The Radioactive and Hazardous Materials Committee met one day in Red River, one day in Carlsbad and three days in Santa Fe. Committee members also had a tour of the Waste Isolation Pilot Plant (WIPP). The committee covered each topic in its scope of work and heard testimony on:

1. the WIPP transportation route change;
2. Congressman Steve Pearce's Government Waste Isolation Pilot Plant Extension Act of 2011;
3. proposals for greater-than-class C radioactive waste at WIPP;
4. Los Alamos National Laboratory legacy waste cleanup status;
5. the impact of this year's fires on the Los Alamos area;
6. hydraulic fracturing technology;
7. the status of the Carlsbad Environmental Monitoring and Research Center;
8. the Carlsbad brine well situation;
9. the National Enrichment Facility status;
10. status of the Public Regulation Commission's renewable portfolio standards;
11. alternative and renewable energy technologies and installations;
12. the status of water quality in the Red River;
13. Los Alamos National Laboratory budget and employment update; and
14. the Department of Environment reorganization status.

No action was taken regarding proposed legislation.

APPROVED WORK PLAN AND SCHEDULE

**2011 APPROVED
WORK PLAN AND MEETING SCHEDULE
for the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

Members

Rep. Antonio Lujan, Chair
Sen. Richard C. Martinez, Vice Chair
Rep. Thomas A. Anderson
Sen. Vernon D. Asbill
Rep. Cathrynn N. Brown
Rep. Brian F. Egolf, Jr.

Sen. Stephen H. Fischmann
Rep. Jim Hall
Sen. Carroll H. Leavell
Sen. John Pinto
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler
Sen. David Ulibarri

Advisory Members

Sen. Rod Adair
Rep. Eliseo Lee Alcon
Rep. Donald E. Bratton
Sen. William F. Burt
Sen. Eric G. Griego
Sen. Gay G. Kernan

Sen. Lynda M. Lovejoy
Sen. William H. Payne
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

Work Plan

The committee was created in 1979 pursuant to the provisions of the Radioactive and Hazardous Materials Act. During the 2011 interim, the committee intends to review:

1. federal nuclear energy initiatives;
2. Waste Isolation Pilot Plant (WIPP) operations and management;
3. Department of Energy "energy park" initiatives for Los Alamos National Laboratory, WIPP and Sandia National Laboratories;
4. New Mexico Department of Environment programs and operations;
5. Los Alamos National Laboratory progress of uranium legacy site cleanup and shipment of waste to WIPP;
6. renewable energy initiatives that may relate to radioactive and hazardous material issues; and
7. hydraulic fracturing for enhanced natural gas production.

2011 Approved Meeting Schedule

<u>Date</u>	<u>Location</u>
June 7	Santa Fe
July 18	Santa Fe
August 15	Red River
October 13-14	Carlsbad
November 16	Santa Fe

AGENDAS

**TENTATIVE AGENDA
for the
FIRST MEETING OF THE
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**June 7, 2011
Room 321, State Capitol
Santa Fe**

Tuesday, June 7

10:00 a.m.	Call to Order —Representative Antonio Lujan, Chair
10:05 a.m.	Interim Committee Protocols —Raúl E. Burciaga, Director, Legislative Council Service
10:30 a.m.	Department of Environment —F. David Martin, Secretary of Environment
11:30 a.m.	2011 Interim Work Plan and Meeting Schedule
12:00 noon	Adjourn

Revised: July 11, 2011

**TENTATIVE AGENDA
for the
SECOND MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

July 18, 2011
Room 307, State Capitol

Monday, July 18

10:00 a.m. **Call to Order**
—Representative Antonio Lujan, Chair

Government Waste Isolation Pilot Plant Extension Act of 2011
—Todd Willens, Chief of Staff, Office of Congressman Steve Pearce

11:30 a.m. **Lunch**

1:00 p.m. **Los Alamos National Laboratory (LANL) Update**
—Paul Henry, Principal Associate Director, Capital Projects, LANL

2:00 p.m. **Las Conchas Fire Runoff Mitigation**
—Pete Maggiore, Department of Energy LANL Site Office, Environment
Program

3:00 p.m. **LANL Legacy Waste Cleanup Progress**
—Michael Graham, Associate Director, Environmental Programs, LANL

4:00 p.m. **Northern New Mexico Citizen's Advisory Board Comments**
 —Ralph Phelps, Chair
 —Robert Gallegos, Vice Chair

5:00 p.m. **Adjourn**

Revised: August 12, 2011

**TENTATIVE AGENDA
for the
THIRD MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**August 15, 2011
Red River Conference Center
101 West River Street
Red River**

Monday, August 15

- 10:00 a.m. **Call to Order**
—Representative Antonio Lujan, Chair
- Renewable Portfolio Standards Status Report**
—Roy E. Stephenson, Director, Utility Division, Public Regulation Commission (PRC)
—Leslie Padilla, Legal Division, PRC
- 11:30 a.m. **Lunch**
- 12:30 p.m. **Chevron Solar Power Plant**
—Margaret Leguste, Chevron
- 1:30 p.m. **Cimarron Utility Scale Solar Array**
—Rhonda Mitchell, Senior Government Relations Analyst, Tri-State Generation and Transmission Association, Inc.
- 2:30 p.m. **The Red River Story**
—Don J. Conklin, Jr., Senior Project Manager and Aquatic Ecologist, GEI Consultants, Inc.
- 3:30 p.m. **Renewable Energy Technologies**
—Henry Herman, Chief Executive Officer, Jetstream Wind, Inc.
- 4:30 p.m. **Adjourn**

Revised: October 12, 2011

**TENTATIVE AGENDA
for the
FOURTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**October 13, 2011
Pecos River Village Conference Center
711 Muscatel Ave.
Carlsbad**

Thursday, October 13

- 10:00 a.m. **Call to Order**
—Representative Antonio Lujan, Chair
- Greater Than Class C Radioactive Waste at the Waste Isolation Pilot Plant (WIPP)**
—F. David Martin, Secretary of Environment
- 11:00 a.m. **WIPP Update**
—Ed Ziemianski, Interim Manager, Carlsbad Field Office, U.S. Department of Energy (DOE)
—Farok Sharif, President and General Manager, URS, Washington TRU Solutions, LLC
—Bill Mackie, Institutional Affairs Manager, Carlsbad Field Office, DOE
- 12:30 p.m. **Lunch**
- 1:30 p.m. **Carlsbad Environmental Monitoring and Research Center**
—George Mulholland, New Mexico State University-Carlsbad
- 2:00 p.m. **Carlsbad Brine Well Update**
—Jami Bailey, Director, Oil Conservation Division, Energy, Minerals and Natural Resources Department (EMNRD)
—Jim Griswold, Senior Hydrologist, EMNRD
- 3:30 p.m. **National Enrichment Facility Status**
—Gregory Smith, Chief Executive Officer, LES
—Brenda Brooks, Director of Community Affairs, LES
- 4:30 p.m. **TRU PACT III Exhibit and Simulated Inspection — Pecos River Village Conference Center Parking Lot**
- 5:30 p.m. **Adjournment**

**TENTATIVE AGENDA
for the
FIFTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**November 16, 2011
Room 321, State Capitol
Santa Fe**

Wednesday, November 16

- 10:00 a.m. **Call to Order**
 —Representative Antonio Lujan, Chair
- Waste Isolation Pilot Plant (WIPP) Transportation Route Change**
 —Alvin C. Dominguez, Secretary of Transportation
- 11:30 a.m. **Lunch**
- 12:30 p.m. **Greater-Than-Class C Radioactive Waste at WIPP and Los Alamos National
Laboratory Legacy Waste Cleanup**
 —F. David Martin, Secretary of Environment
- 2:00 p.m. **Fire Impact Update**
 —Pete Maggiore, Department of Energy
- 3:00 p.m. **Hydraulic Fracturing**
 —Dr. Tom Engler, Chair, Petroleum Engineering Department, and Dean of
 Engineering, New Mexico Institute of Mining and Technology
 —Dr. Daniel Lopez, President, New Mexico Institute of Mining and Technology
- 4:00 p.m. **Concerned Citizens for Nuclear Safety Statement**
 —Joni Arends, Executive Director, Concerned Citizens for Nuclear Safety
- 5:00 p.m. **Adjourn**

MINUTES

**MINUTES
of the
FIRST MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**June 7, 2011
Santa Fe, NM**

The first meeting of the radioactive and hazardous materials committee (RHMC) was called to order at 10:10 a.m. by Representative Antonio Lujan, chair, on Tuesday, June 7, in room 321 at the state capitol.

Present

Rep. Antonio Lujan, Chair
Sen. Richard C. Martinez, Vice Chair
Rep. Thomas A. Anderson
Rep. Cathrynn N. Brown
 (via conference call)
Rep. Brian F. Egolf, Jr.
Sen. John Pinto
Rep. Jim R. Trujillo
Sen. David Ulibarri

Absent

Sen. Vernon D. Asbill
Sen. Stephen H. Fischmann
Sen. Carroll H. Leavell
Rep. Shirley A. Tyler

Advisory Members

Sen. Rod Adair
Rep. Eliseo Lee Alcon
Sen. Lynda M. Lovejoy
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

Rep. Donald E. Bratton
Sen. William F. Burt
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. William H. Payne

Staff

Gordon Meeks
Renée Gregorio

Guests

The guest list is in the meeting file.

Tuesday, June 7

Introductions

At the request of the chair, committee members and staff introduced themselves to each other and to the audience. It was noted that there are several new members of the committee this interim.

Interim Committee Protocols

Raúl E. Burciaga, director, legislative council service, reviewed interim committee protocols and cost-saving measures for interim committees. He directed committee members to

the interim committee calendar, which he stated was developed with minimal conflicts for voting members. Because of budget cuts, he added, the New Mexico legislative council reduced the number of meetings and spaced them further apart and asked that all interim committees limit meeting times and travel, with travel for meetings not allowed without council approval after September 30. The RHMC is limited to four meetings this interim, he said. Mr. Burciaga indicated that the council will be reviewing other cost-saving measures during its June meeting, including limiting out-of-state travel as well as the number of meeting days a legislator could attend for committees to which that legislator is not a member.

Committee members posed several questions and observations to Mr. Burciaga, some of which he will take to the legislative council for review and decision-making. These include whether a member can be counted as present at a meeting via phone for any formal actions; limiting the number of bills from interim committees as a cost-saving measure, with the government restructuring task force as an example; concerns over the timing of the special session as related to the secretary of state's October deadline to submit nominating petitions; the attempts in the past to consolidate the science, technology and telecommunications committee with the RHMC or to update the name of the RHMC to more closely resemble what the committee's concerns are; limiting the number of advisory members on committees as a cost-saving measure; and clarification related to taxability of per diem (taxable) and mileage (not taxable).

**Request to Staff— Senator Martinez asked to see the actual numbers for cost savings related to limiting out-of-town travel.*

Department of Environment

Dave Martin, secretary of environment, and Raj Solomon, deputy secretary, outlined the department's mission and objectives, budget and organization, challenges, focus areas and strategies for addressing these challenges. Among the department objectives that Secretary Martin put forward were strategies based on sound science, responsible regulation balanced with economic growth, consistency and fairness regarding environmental regulations, establishing strong dialogue between regulators and the regulated community, promoting environmental awareness through open communication and advocating that the department heads act as facilitators, not antagonists. Secretary Martin delineated the department's focus areas to include resource and environmental protection, such as water and air quality; food inspections and landfills; industries, including dairies, power plants and Intel; and hazardous waste, including waste from Los Alamos national laboratory (LANL), Sandia national laboratories (SNL), mine waste and tailings. He spoke of specific projects within these focus areas.

Secretary Martin reviewed the duties of the hazardous waste bureau of the department and its major projects, including cleanup at Kirtland air force base (KAFB) and LANL and storage and shipment of waste at the waste isolation pilot plant (WIPP). He discussed the responsibilities of the federal department of environment (DOE) oversight bureau, which receives federal funding and performs surveillance and monitoring at the DOE facilities in the state, including LANL, SNL, WIPP and offices in Santa Fe, White Rock, Albuquerque and Carlsbad. Among the LANL consent order accomplishments that the secretary reviewed are the completion of demolition of buildings, the drilling of monitoring wells, record shipments to WIPP, cleanup projects, a reduction of the amount of transuranic waste stored above ground, the

completion of ground water wells and completion of a memorandum of understanding and samplings, sediment control and an early notification system installed to support the Buckman direct diversion project. (See a copy of the handout for more specific base program completions by year.)

Among the new strategies for the department that Secretary Martin discussed are implementing an internet-based permitting and filing system, establishing a small business task force, establishing a customer satisfaction survey and organizing "tiger teams" as an interagency approach to look at complex problems at KAFB, LANL, SNL and the Questa mine.

Committee members questioned how department changes in personnel help carry out the mission, to which Secretary Martin replied that the changes reflect a need to improve collaboration and facilitation and reduce antagonistic relationships, and that personnel changes were made in line with those goals. Concern was expressed regarding media coverage that indicated that the federal environmental protection agency (EPA) was asked to de-obligate funds allocated to New Mexico. Deputy Secretary Solomon stated that this was related to the EPA asking the department to conduct a program that is not under the department's purview, and that the department is reviewing which programs it has regulatory authority to work on. Projects within this regulatory authority include a leadership in energy and environmental design (LEED) detection program for oil and gas designed to prevent leaks and a recycling program. He added that the de-obligated funds were for a green building study, which was clearly outside the department's regulatory authority. Another committee question related to the definition of "sound science", with a request for an example of decisions made that represented "unsound science", because both terms were referred to by the secretary. Deputy Secretary Solomon gave the example of a decision made by the EPA that would have required the public service company of New Mexico to install pollution control equipment that amounted to "unsound science" at an unreasonable cost for New Mexicans.

Several committee members advised the department to be cautious regarding sensitivity to the state's diverse population when making decisions, especially those that are pro-business, by ensuring that the environment is also protected. Representative Lujan stressed that in a regulatory environment, creative tension is sometimes necessary. He added that he hopes the changing culture that the department spoke of would not be one that is partial to special interest industries and would not overlook people in smaller communities. Concern was expressed, too, regarding the number of leadership vacancies in the department at present and how difficult it is to know who to contact with issues that legislators face during the interim.

**Legislative Request — Senator Rodriguez asked to see an organizational chart of the department of environment and any currently vacant positions. She also asked for phone numbers and contact information for leadership positions within the department.*

Work Plan and Meeting Schedule

Committee discussion ensued regarding this year's proposed work plan and meeting schedule. Several members suggested that out-of-town travel is necessary and valuable, especially in regard to touring the WIPP site and other cleanup sites in the state, including Milan, Los Alamos and Red River. Committee members discussed options to present to the legislative council. Representative Egolf made a motion that the committee travel to Carlsbad for the two-

day meeting on October 13-14 and to Red River for either the July or August meeting. Senator Rodriguez seconded the motion and it passed, with Representative Lujan opposing.

One additional topic was added to the work plan, which looks at ground water quality related to hydraulic fracturing, and the work plan was thus approved.

Adjournment

There being no further business, the committee adjourned at 12:35 p.m.

**MINUTES
of the
SECOND MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**July 18, 2011
Room 307, State Capitol
Santa Fe**

The second meeting of the radioactive and hazardous materials committee (RHMC) was called to order at 10:02 a.m. by Representative Antonio Lujan, chair, on Monday, July 18, in room 307 at the state capitol.

Present

Rep. Antonio Lujan, Chair
Sen. Richard C. Martinez, Vice Chair
Rep. Thomas A. Anderson
Sen. Vernon D. Asbill
Rep. Cathrynn N. Brown
Rep. Brian F. Egolf, Jr.
Sen. John Pinto
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler
Sen. David Ulibarri

Absent

Sen. Stephen H. Fischmann
Sen. Carroll H. Leavell

Advisory Members

Rep. Donald E. Bratton
Sen. William F. Burt
Rep. Jim Hall
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

Sen. Rod Adair
Rep. Eliseo Lee Alcon
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. Lynda M. Lovejoy
Sen. William H. Payne

Staff

Gordon Meeks
Carmella Casados
Renée Gregorio

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Monday, July 18

Government Waste Isolation Pilot Plant (WIPP) Extension Act of 2011

Todd Willens, chief of staff, office of Congressman Steve Pearce, passed out a packet that included a copy of H.R. 2367, the federal Government WIPP Extension Act of 2011. He described the purpose of the act as allowing WIPP to dispose of non-defense, government-owned transuranic (TRU) waste in addition to the waste it already accepts. He explained that the bill, sponsored by Congressman Pearce, would not allow WIPP to accept private commercial waste, so the kind of waste WIPP accepts would not change.

Mr. Willens praised WIPP as a proven, world-class facility for the disposal of low-level TRU waste that should serve as a model for the building and maintenance of radioactive disposal sites. He further described WIPP as a site that creates a unique environment that absorbs waste and prevents release of radioactivity and that accepts waste from 14 federal department of energy (DOE) facilities. He added that WIPP has utilized 43% of its facility, but it has the capability to hold more TRU waste, and non-defense waste is a prime candidate for WIPP.

H.R. 2367 supplements WIPP's defense mission, he said, because the mission of WIPP is to protect human health and the environment by the safe disposal of waste. Mr. Willens stated that this legislation proposes to clean up waste in eight states, including New Mexico. He emphasized that at present, federal agencies, primarily the DOE, are holding TRU waste that cannot be disposed of because of WIPP's current restrictions, causing a significant risk to public health.

Committee members posed several questions to Mr. Willens and included praise for the work of Congressman Pearce on introducing this legislation and for former State Representative John A. Heaton for his work with WIPP. Concern over decisions regarding the Yucca mountain site were expressed, to which Mr. Willens responded that this is a highly contentious issue in Washington, D.C. at present, with the current administration "zeroing out" funding for Yucca. He added that this is "not a question that'll get answered anytime soon".

Questions and discussion addressed:

- the difference between defense-related TRU waste and government-owned waste;
- the prioritization of the eight states that would benefit from cleanup under H.R. 2367;
- the fact that WIPP can only handle TRU defense-related waste at present and that high-level waste could be accommodated at WIPP only if federal legislation is changed;
- Congressman Pearce's position on legacy cleanup issues at Los Alamos;
- restricting waste to government-owned waste and the potential for accepting commercial waste;
- whether the government is creating jobs at WIPP;
- the role of the state in terms of any licensing or permitting;
- how much non-government-generated waste exists;
- the Yucca mountain site and whether waste will be accepted there;
- the criteria for TRU waste;
- the blue ribbon report on America's nuclear future; and
- the hearing process and expected reception of this bill.

The committee approved the minutes of the June 7 meeting. A show of attendance for the upcoming August 15 meeting in Red River was requested. Several members expressed interest in touring the WIPP site during the October meeting.

Los Alamos National Laboratory (LANL) Legacy Waste Cleanup Program

Michael Graham, associate director of environmental programs at LANL, reviewed the mission of the programs he directs, which includes investigating and remediating legacy hazardous and radioactive waste areas, repacking and shipping TRU waste and demolishing old buildings. He said that with the federal American Recovery and Reinvestment Act of 2009 (AARA) funding received less than two years ago, the focus was placed on cleaning up TA 21 across from the airport. He reviewed the accomplishments during this time frame, which included creating or saving more than 400 jobs, demolishing 24 buildings, providing small business subcontracts and maintaining compliance on ground water monitoring wells. The one project remaining is at material disposal area B, which needs to be cleaned up and returned to residential standards. He specified that there are 22,000 yards of cubic waste in this landfill. Mr. Graham ensured the committee that all remediation work has been done safely, with no personal or release contamination.

Mr. Graham reported on shipments to WIPP, saying that this will be the third record year for shipments, with 132 shipments made in 2009 and another 157 in 2010. For 2011, WIPP shipments could reach more than 170, he stated. There is also much more work to be done, with 10,000 drums remaining above ground and 6,000 below ground, and he said that LANL is continuing its work to accelerate the processing and shipping of waste.

He reviewed shipping improvements since 2006 and other cleanups accomplished in the canyon, including storm water controls and a reinforcement of monitoring wells to ensure public protection. He reported that good progress is being made on cleanup across all sites at LANL (see map on page 9 of the handout).

LANL is committed to compliance with the consent order, Mr. Graham stated, with all documents submitted early or on time in fiscal year 2009 through the current fiscal year. He presented the budget request, which will be significantly higher in 2012. In conclusion, he reviewed the goals that his program has set post-AARA, which include improved communication with the New Mexico department of environment (NMED), concentrating on high-risk areas such as removing TRU waste from the plateau area after the Las Conchas fire, awarding master contracts to small businesses and supporting the NMED's "tiger team" for LANL cleanup.

Committee members asked several questions related to the specifics of the waste and waste disposal as well as the nature of site investigations.

LANL Update

Paul Henry, principal associate director of capital projects at LANL, gave an overview of the lab's budget, work force, organizational changes, core mission and security focus. He described LANL as a national security science laboratory with an annual budget of approximately \$2.5 billion, of which \$1.4 billion (or 56%) is designated for the national nuclear security administration (NNSA) weapons programs. He stated that 28% of the career work force started at LANL as students or post-doctoral students, and that LANL is particularly proud of this fact. He added that of the lab's 12,000 employees, about 8,500 are direct lab employees and the rest are contract employees.

Mr. Henry reported that work is underway to transform the Los Alamos site into a more efficient site. This includes the management of 40 square miles and more than 1,200 buildings; he said that the main objective is to minimize the footprint, upgrade older facilities and build new ones. He also said that phase 2 of the chemistry and metallurgy research replacement (CMRR) project is underway.

The core mission of LANL, Mr. Henry stated, is to sustain the safety, security and effectiveness of the country's deterrent through stockpile stewardship, adding that Los Alamos's warheads constitute over 60% of the nation's deterrent. Through several technologies, including space-based nuclear detonation detection, imagery analysis and exploitation, and nuclear and liquid explosives detection, LANL achieves its national security mission.

Mr. Henry discussed LANL's energy security pillars, which include effective waste management, energy storage generation and transmission and clean fossil technology. He added that sustaining bipartisan support is an overall objective and a challenge for the lab.

The committee questioned and discussed:

- the security of nuclear materials in Russia and other nations;
- where Bechtel fits on the organizational chart;
- how funds allocated for the Cerro Grande fire were spent;
- a target date and what will happen with the TRU waste after the closure of WIPP and forming any plans for the storage of that waste;
- the need to start mining in New Mexico and on the Navajo Nation; and
- if, in the current financial situation, this is a good time to do away with the NNSA.

Las Conchas Fire Runoff Mitigation

Pete Maggiore, deputy assistant manager, environmental projects office, NNSA, gave an overview of the Las Conchas fire, Cerro Grande post-fire mitigation and current runoff and mitigation efforts. Reporting on the most recent fire, Mr. Maggiore said that a downed powerline sparked the fire that began on June 26, and on the first day the fire burned over 43,000 acres, almost the size of the Cerro Grande fire. He praised the work of the firefighters and said that the Cerro Grande fire actually provided a fire break that has helped in fighting the Las Conchas fire.

He said that LANL is in sound condition and it suffered little or no smoke damage, and that although the fire spread quickly, there was only one spark on lab grounds, at TA 49, which was rapidly extinguished. He added that all basic services are back in place and employees are back to work. He lauded the presence of interagency cooperation and government-to-government relationships as key to the success of fighting this fire, saying that the state activated its emergency operations center in Santa Fe five hours after the fire began. He added that the fire's nearest proximity was 3.5 miles, whereas the Cerro Grande fire was much closer at one-fourth to one-half mile.

He said that no canyons on lab property were burned; in contrast, during the Cerro Grande fire, over 7,000 acres of the lab grounds burned. He assured committee members that all three of the Buckman storm water early notification gauges are operational. He said that post-Cerro Grande fire mitigations were effective and that fire management lessons learned during that fire have been in practice for 10 years. He stated that fire management actions taken since

2000 include the thinning of trees; the installation of fire breaks and roads; the building of an interagency fire center, helicopter base and emergency operations center; the purchase of new fire trucks, service vehicles and heavy equipment; improved storm water runoff and erosion controls; and the enactment of interagency agreements and training.

Areas of continued concern include a review of infrastructure that could be affected by storm water runoff, with the attendant risks and possible actions needed. He added that several watersheds were affected by the fire, including Los Alamos canyon, where most of the current emphasis is being placed; Pajarito and Two-mile; Water canyon and canon de Valle; Frijoles; and Guaje. He stated that during a wildfire, the soils that get burned become hydrophobic; the soils are heated to such a degree that they lose their ability to let water infiltrate, and the soils repel water, which then runs off down canyons and causes erosion.

He discussed the formation of burned area emergency response (BAER) teams, which are part of an interagency effort to evaluate burned areas and recommend emergency action. He said that these teams are made up of specially trained professionals from the United States forest service, the DOE, the state of New Mexico, the pueblos of Santa Clara, San Ildefonso and Cochiti and the national park service.

In indicating LANL's top priorities, Mr. Maggiore said that what has already been accomplished by lab employees includes the installation of barriers to protect infrastructure, the removal of barriers within canyons and the cleaning of culverts, the removal of debris from canyon bottoms and the installation of an early-warning system to notify electronically when "rain events" happen. He added that water quality testing is ongoing among several agencies. In addition, flood mitigation, surface water monitoring and information management systems are all part of the efforts being made to mitigate erosion and flooding.

Mr. Maggiore stated that LANL is continuing to collaborate with its neighbors, including tribal governments, Los Alamos county, the city and county of Santa Fe and state and federal agencies, and that data will be available to the public through the lab's web site.

Committee questions and discussion included:

- the remediation of hydrophobic soil;
- air quality monitoring during the fire;
- sediment removal;
- the permitting process for the CMRR project;
- sediment removal as part of the Buckman diversion project;
- if the Cerro Grande fire burned through new growth and formed a fire break;
- the total acreage burned in the Las Conchas fire;
- natural stabilization of the soil;
- help for the Pueblo of Santa Clara, especially in regards to the hydrophobic soil and the upcoming monsoon rains;
- spending on fire mitigation and praise for local fire department responsiveness; and
- the scope of work on overgrowth and any mitigation to thin the forest next to the lab.

Northern New Mexico Citizen's Advisory Board

Robert Gallegos, vice chair, and Ralph Phelps, chair, northern New Mexico citizen's advisory board (NNMCAB), presented next. The NNMCAB is a DOE site-specific board, which was developed to involve local citizens in DOE environmental management remediation decisions at major nuclear facilities. Mr. Phelps said that the NNMCAB is one of eight federal advisory boards that serve the DOE. He added that some of the reasons for the board's existence are to recognize legacy waste and the environmental impact of LANL over the past 60 years, to provide needed community involvement, to monitor LANL's activities and to advise the DOE on cleanup and remediation at LANL. He said that the NNMCAB seeks to increase public involvement and awareness related to environmental remediation and management and to help make public voices heard by the DOE's decision-makers.

Mr. Phelps stated that the top issues have been the same over the past few years: to provide funding so that LANL can meet its consent order, to ensure that the DOE expedites high priority cleanup work and to ensure that the DOE focuses on development of an integrated site-wide surface water and ground water monitoring program.

The committee asked questions about and discussed:

- why the NNMCAB did not recommend that LANL take on more waste;
- the NNMCAB's budget and board membership; and
- a recent recommendation to the DOE to restore user confidence in the RACER database and how the database is maintained.

Public Comment

In answering an earlier request by several audience members to be given air time for public comment, Representative Lujan did so, asking for public presenters to be brief and not repetitive.

Joni Arends, executive director of concerned citizens for nuclear safety (CCNS), said that she has attended meetings since 1988 on issues concerning WIPP. She expressed concern over water quality due to the Las Conchas fire. She said that CCNS organized a conference at the Eldorado hotel on Saturday where 450 people attended. There were presentations on hydrophobic soil and mitigation, and CCNS took the directive to look more closely at these issues. She said that in 2002, CCNS made comments public regarding the Buckman project being downstream from LANL. Ms. Arends questioned how the state can possibly oversee the 30 high-priority sites identified by the EPA. She is concerned about the potential for contamination to be released from storm water. Ms. Arends asked how drinking water can be protected, and she expressed further concern about the money Santa Fe taxpayers are spending on the Buckman project and stressed that both Los Alamos and Pueblo canyons must be cleaned up. Ms. Arends handed out an article to committee members entitled "Another Kind of Fukushima?".

Several other audience members spoke, including Nancy Seawalk, who expressed concern over pollution in wells, radioactive materials in ground water and LANL's 15,000 warheads; Tom Gallegos, who said that wildlife is showing early signs of contamination and that he would like feedback about this at future meetings; and Robin Laughlin, who questioned LANL's mission of nuclear warheads and said that LANL is doing an appalling job of policing waste.

David Bacon, who described himself as not being a "flaming liberal", stated that in his opinion, fire could be the death of this area. He spoke of the national and international appreciation that occurs when unchecked wildfires rage near a nuclear facility, making New Mexico "not a place to visit or retire to". He added that the mission of the labs could begin to change if the labs partnered with tribes and the state and begin reclamation work together. He said that New Mexico needs to take this problem seriously. While partnering with other agencies and using the expertise that exists at the labs, Mr. Bacon stated that systems could be legitimately cleaned up, restored and reclaimed.

Scott Kovak of nuclear watch New Mexico wanted to add a footnote on numbers given earlier in the meeting. He said that the consent order is a plan and that many remedies have not been selected yet, such as the remedy for cleanup of area G. He stated that there is an assumption that cleanup is an ongoing process at the labs but that "cleanup" needs to be defined. He added that some remedies for removing waste from this area can cost up to \$30 billion and that the cost is based on recommendations from the lab itself.

Reverend Holly Beaumont of Santa Fe said that "if you use nuclear weapons against someone who has them, it's suicidal, and against someone who doesn't, immoral". She said that the so-called legacy waste goes all the way back to the Manhattan project. She stated that there are 21 million cubic feet of waste dumped in unlined pits sprinkled all over the plateau and that there are between 20,000 to 50,000 barrels of waste above ground in fabric tents. She said that LANL was told that it needed to build appropriate hardened onsite storage, but by the time construction was completed, LANL said, the waste would be stored elsewhere; yet all this waste still exists at LANL.

She asked why, if these are the experts, are they not demanding that the issue of waste be addressed before this project goes forward? She added that we live in a post-September 11 world, a post-British Petroleum oil spill world and a post-Fukushima world — and in that world, corporate or government regulations cannot be trusted. She said that a regulatory agency is needed at the state level, and she urged committee members not to take anything for granted. She added that LANL is now operated by Bechtel, and that no matter how much it wants to minimize its role at LANL, it cannot minimize its legacy and its footprint around the world. She warned the committee to be careful about trusting LANL in protecting the public interest.

Anna Hampton, a 38-year resident of Santa Fe, was appalled that neither of the LANL representatives could answer the committee's questions. She said that this is not acceptable. She added that Mr. Graham did not address the legacy waste in the canyon offsite. She believes that LANL is still responsible for those offsite and onsite dumps and that they need to be cleaned up because they are above the sole source aquifer. She urged the committee to take care of the public and stay on top of LANL.

Adjournment

There being no further business, the committee adjourned at 3:20 p.m.

**MINUTES
of the
THIRD MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**August 15, 2011
Red River Conference Center
Red River, New Mexico**

The third meeting of the Radioactive and Hazardous Materials Committee was called to order at 10:10 a.m. by Senator Richard C. Martinez, vice chair, on Monday, August 15, 2011, at the Red River Conference Center.

Present

Sen. Richard C. Martinez, Vice Chair
Rep. Thomas A. Anderson
Sen. Vernon D. Asbill
Sen. Carroll H. Leavell
Sen. John Pinto
Rep. Jim R. Trujillo

Absent

Rep. Antonio Lujan, Chair
Rep. Cathrynn N. Brown
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann
Rep. Shirley A. Tyler
Sen. David Ulibarri

Advisory Members

Rep. Eliseo Lee Alcon
Rep. Jim Hall
Sen. William H. Payne
Sen. Nancy Rodriguez
Rep. Nick L. Salazar

Sen. Rod Adair
Rep. Donald E. Bratton
Sen. William F. Burt
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. Lynda M. Lovejoy
Sen. Bernadette M. Sanchez

Guest Legislator

Rep. William "Bill" J. Gray

Staff

Gordon Meeks
Renée Gregorio

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Monday, August 15

Renewable Portfolio Standards Status Report

Roy E. Stephenson, director of the Utility Division at the Public Regulation Commission (PRC), spoke to the committee about the implementation of the Renewable Energy Act, amendments to that act and the political environment for regulation of electric utilities.

He said that, in general, the history of regulation of the electric utility industry has emphasized the need for reliability of electric power and affordability. In recent years, diversity of generation sources has come into the mix due to public support for alternative, cleaner fuel and the perception of "peak oil". Therefore, states have enacted laws requiring utilities to obtain electric power from a mixture of alternative generation sources. The legislature enacted the Renewable Energy Act to include a renewable portfolio standard, like many other states have done, and which Congress is considering.

Many states also require integrated resource plans (IRPs) from their utilities, which in New Mexico means that all utilities must have five-year IRPs and offer choices to the public to participate in these plans. The IRPs lay out the utilities' source of power and expectations for rates to the consumer.

Mr. Stephenson said that the priorities for utilities are regulation, reliability, affordability and diversity. However, these priorities do not all come in the same package, he said. To achieve one priority might mean spending more money on other priorities. This is a challenge for all utilities and their regulators. Mr. Stephenson said he would be meeting with other state and federal representatives later this year to hear about strategies and issues related to achieving this goal.

Renewable energy sources are touted by their proponents because many would like the United States to be less dependent on foreign sources of energy. There is a desire to use native resources. Secondly, every form of fossil fuel combustion has consequences, such as tailings, the effects of coal mining, smoke in the atmosphere and other environmental consequences.

A diversified portfolio is necessary to achieve those goals. The PRC is struggling with diversity, Mr. Stephenson said. Coal is cheap and abundant, but burning it produces smoke. Natural gas is available, but it costs more. Furthermore, all these sources must be integrated into the grid. The natural gas outage in February this year demonstrated that electric and natural gas utilities are mutually dependent. Natural gas requires electricity to operate. Interdependence drives management of the entire electric utility system.

The Renewable Energy Act sets out broad policy objectives, and the PRC enacts rules to ensure that this and other laws are carried out. The statute says the renewable energy portfolio shall be diversified, and the PRC rules go more deeply into how the portfolio needs to be diversified. Each power source has its own advantages and costs, depending on the area of the state. Wind resources are readily available in some places, and solar is abundant in most places. Geothermal energy has not yet been fully explored, but it may be promising. In addition, there is some ability to use biomass generation, including woody biomass, dairy waste and agricultural waste. Some advocates think landfill and sewer gas from human waste might also be added to the mix.

Many other states with renewable energy portfolio standards do not have the resources that New Mexico does. How to connect generation and consumption is an issue nationwide, Mr. Stephenson said.

New Mexico is number one in terms of distributed generation, and the state has standards that are among the highest in the country. These standards include filing requirements and the submittal of annual reports by the utilities. Mr. Stephenson and Leslie Padilla clarified program filings, what they look like, the time frame for the filings and the status of one pending filing from last year by Public Service Company of New Mexico (PNM), filed on July 1.

Mr. Stephenson said that the PRC obtained federal funding to pay for a new unit at the PRC dedicated to efficiency and renewable energy. He said that PNM's filing indicates that it satisfied the current renewable energy portfolio standard requirement for 10% renewables. Diversity requirements in the law, however, are a real challenge for the utilities. Biomass, for example, is hard to derive energy from because there are no sources out there selling this sort of energy.

Ms. Padilla said that El Paso Electric has proposed projects that by 2012 will be 60% solar. In order to achieve these targets, she said, utilities need to be more creative and less conventional.

All utilities are required by statute to offer voluntary renewable energy purchase programs to their customers. All new industries take a while to grow due to economies of scale. New Mexico has been viewed as a good place for renewable energy companies to relocate. For example, Spain, a world leader in solar energy, has shown interest in partnering with New Mexico companies.

PNM's filing is a good example of regulatory difficulties, the presenters said. Renewable energy certificates are regulatory devices to meet generation requirements of a certain amount of electricity from renewable sources. Some utilities have more certificates than they need. Southwest Public Service (SPS), for example, cannot just sell service to PNM because SPS is in a different grid and energy transport is not possible. SPS proposed to sell certificates to PNM. Some argue that the statute allows it, even across state lines, as long as there is a market. The statute does say that if energy is generated and someone uses it, the energy can be counted. There is an agency that tracks such things, said Mr. Stephenson.

He also explained the reasonable cost threshold, which says that a utility is not required to generate energy or purchase it if it exceeds a "reasonable" threshold. But the question then becomes, what is reasonable? The PRC defines "fair, just and reasonable" to make sure there is no duplication or waste. Energy generation is encouraged, but it also must be marketable.

He mentioned several examples, such as the solar projects on the outskirts of Taos at the University of New Mexico campus and the Kit Carson Electric Cooperative photovoltaic system. Tax credits are available to individuals but not to governmental entities such as a university. Another entity gets the tax credit, such as the manufacturer.

PNM's 2009 plan has projects sited next to power stations where there is backup capacity when the sun goes behind a cloud or the wind dies down. PNM has looked at where the need is and has plans for the renewable facility to go where it is needed. If a utility built it, it can benefit. Mr. Stephenson explained that the PRC has to balance the interests of the investors and the ratepayers.

Mike D'Antonio, representing PNM, asked to speak and explained that utilities may not be creative or inventive because there is risk associated with getting approved by the PRC. Everyone pays a premium for that risk, he said.

The presenters described several aspects of renewable generation constraints involving intermittency and costs that have to be factored into decisions of utilities and the PRC.

Questions and discussion by the committee included:

- calculation of megawatts from wind;
- the disadvantages of wind turbines, including noise, damage to birds and bats, and load versus wind slide;
- energy demand as cyclical;
- integration of variability and lack of storage;
- need for systems that are quick to ramp up and down;
- calculation of a reasonable cost threshold for each technology;
- hidden costs;
- net metering;
- energy efficiency;
- load management;
- demand management;
- decoupling rates from the direct costs of providing power;
- energy savings mandates;
- PRC rules versus statutes;
- the Public Utility Act provision that grants fining authority to the PRC;
- source of the renewable energy portfolio standard;
- consideration of nuclear energy as a renewable energy source;
- exemption of local government-owned electric utilities from the law (Renewable Energy Act);
- how the renewable energy portfolio standard numbers were decided upon;
- carve-outs for specific kinds of renewables;
- the presence of geothermal and biomass energy on federal land in this state and help in developing those resources;
- tax subsidies from the federal government compared to the state;
- the provision in statute that says if a utility cannot meet the target because of cost, it is forgiven;
- billing everyone a fair price instead of rolling it into a fixed cost;
- location of the independent grids;
- overabundance of cheap natural gas in the state and natural gas generation of electricity; and
- reconsideration of renewable energy portfolio standard percentages.

Chevron Solar Power Plant

Margaret Lejuste, policy government and policy affairs for Chevron, and John Espinoza, special projects manager for the Questa mine, spoke about the Questa solar project, a collaboration between Chevron Mining Incorporated and Chevron Technology Ventures. During this five-year testing period, the project is using concentrating photovoltaic power (CPV) to provide an in-depth understanding of the technology and its benefits, Ms. Lejuste explained. She added that northern New Mexico is a unique solar resource with over 300 days of concentrated sunshine. She said that the site being used for the project is on brown fields, or previously impacted lands, rather than on pristine lands.

Mr. Espinoza reiterated that one of the benefits of the project is the reclaiming of the tailings facility. He said that the project participants are evaluating how deep a cover needs to be on top of the tailings for vegetation to grow, and they will assess the effectiveness of various levels for post-mining remediation. He said the way the towers work is much like a sunflower in that the towers track the sun and angle up and down to find the sun to collect energy. He mentioned the presence of safeguards, including fencing, video cameras and sensors on the monitoring system. The Questa project is one of the largest CPV facilities in the world, covering about 20 acres and including 173 solar trackers that generate one megawatt of electricity, which is sold to Kit Carson Electric Cooperative and distributed throughout Questa and other areas of the state.

Ms. Lejuste stressed the importance of community involvement, saying that many town hall meetings were held to get public input and to meet with officials and key stakeholders to address concerns regarding visibility and security of the equipment. She added that although the trackers are 18 feet by 20 feet in size, they cannot be seen from Highway 522 except in one spot. She also stated that the project has provided up to 100 local jobs during construction, mostly to former mineworkers. The project was completed without incident or injury, she stated.

Questions and discussion by committee members addressed:

- the return on investment received by selling to Kit Carson Electric Cooperative and Kit Carson being able to meet its requirements for solar energy;
- space needed for the movement of the panels as they track the sun;
- how to generate economic development in the area, especially as related to what one megawatt might be worth;
- total output being one megawatt, enough to power an area the size of Questa;
- that the Questa mine still employs 170 people and is in operation in a very limited way; and
- whether there is a tax incentive for Chevron.

Cimarron Utility Scale Solar Array

Rhonda Mitchell, senior governmental relations adviser for the Tri-State Generation and Transmission Association, Incorporated (Tri-State), said that the company is a nonprofit, wholesale power supplier owned by 44 electric cooperatives and public power districts serving approximately 1.5 million people in Wyoming, Nebraska, Colorado and New Mexico. She said that Tri-State does not own the Cimarron solar facility, but purchases power agreements and transmission from it. Tri-State owns and maintains over 5,000 miles of transmission lines, she stated.

Ms. Mitchell reviewed the typical daily consumption patterns, which show the morning and evening load pick-up times, as well as the daily generation patterns, which show that coal is the most heavily loaded source. She said that generation varies, of course, on cloudy days. It is the variation, she added, that is difficult to track and plan for. (See the handout for specific graphs.)

Ms. Mitchell reviewed the renewable energy portfolio standard mandates that apply to Colorado and New Mexico, including that there be 5% renewable energy sources in place by 2015 and 10% by 2020. She explained that the cooperative model is different in that there are no shareholders; with Tri-State, costs are passed on to its member-owners. She added that Tri-State ranked number six nationally in the Solar Electric Power Association's utility solar rankings for its 30-megawatt generation and was the highest ranked cooperative utility. She also said that Kit Carson Electric Cooperative in Taos ranked number two nationally in solar production.

In conclusion, Ms. Mitchell summarized that photovoltaic power is a credible resource, but not inexpensive, although prices should continue to drop. She said that two full-time employees operate the Cimarron facility and that there were between 140 and 160 people employed during the construction phase of the project.

Questions and discussion by committee members addressed:

- how to integrate renewable energy into the existing energy system, whose baseload is coal;
- locations of gas and oil generating plants in Lordsburg and in Colorado;
- clarification of the megawatts generated in total from a variety of sources (4,000) versus what is generated from solar itself (30);
- whether the small local cooperatives are equal owners with Tri-State;
- how decisions get made at Tri-State, which is through its 44-member board, with each owner having a member on the board;
- the need for new technology for storage as it is currently limited;
- how power is regulated within all the spikes and dips of consumption, which is that the load is constantly monitored and coal plants meet the majority of the demand; when loads spike, natural gas plants are fired up or other power is purchased; and
- power regulation depends on the time of year, and utilities look at forecasts and weather and have automatic generation control that works to meet the need.

The committee approved the minutes from the July 18 meeting.

The Red River Story

Lee Bergstedt, aquatic ecologist at GEI Consultants, Incorporated, gave a history of the biological monitoring of Red River, which began in 1997 and is still in place. Mr. Bergstedt said that, due to concerns over mining operations and rock pile effects on the aquatic community, data have been collected over three time periods: baseline conditions, pre-1966; mining operation conditions, 1966-1996; and present conditions, 1997-present. He indicated that most problems were from excess sediment from many sources but were mostly related to hydrothermal scarring along the river, which caused poor water quality. In addition, baseline data collected showed that these impacts were present prior to open pit mining in the area and also occurred in areas upstream of the mine. He said that there were no measurable impacts of mining on the ability of

the Red River to support aquatic organisms. (See handout for the specific data collected over time.)

Mr. Bergstedt added that toxicity tests were conducted after rain events. There has been a decline in fish populations above town and around Capulin Canyon, but there has been an increase in population downstream. He said that, historically, fish populations are good upstream of town, then hydrothermal scarring causes a decrease in population, then the population increases again. As with the area around Hottentot drainage (as shown in the photograph in the handout), the amount of mud and resultant poor water quality caused by the sediment dumped into the river affected the fish population two months after the rain event. This was in 2007, but Mr. Bergstedt reported comebacks of fish populations in 2008 and 2009, then a stabilizing pattern, even though the habitat is not as strong as before.

To bring the story to the present, Mr. Bergstedt stated that since 1997, Red River has a population of brown trout that is sustaining; rainbow trout are still stocked; and benthic invertebrate species are present. He added that what limits the river from being able to clear itself is the continuance of mudslides from scars. He concluded that naturally occurring events are the driver in the river's habitat and that all data collected since 1997 are available through Chevron's annual mining reports.

Questions and discussion by committee members addressed:

- the definition of benthic invertebrates;
- the water's murkiness possibly being caused by the Bitter Creek drain scars;
- the definition of hydrothermal scars and clarification that the scars are not due to mining;
- the depth of the river; and
- determining the number of fish per mile through three pass removal methods.

Renewable Energy Technologies

Henry Herman, chief executive officer for Jetstream Wind, Incorporated (JWI), a Santa Fe-based company dedicated to providing innovative and effective power production solutions for global clean energy, spoke to the committee about JWI's various projects and use of technologies. He said that JWI has developed zero-emission electric, fuel and desalination systems using solar and hydrogen technology, which generates and stores electricity at prices that are competitive with coal-based systems.

He described JWI's concentrating solar power (CSP) dish as the smallest, most powerful dish in the world, differing from other dishes in that it is not only cheaper, but it can be assembled in 30 minutes or less. He added that JWI is creating a version of the CSP dish that involves a solar pyrolysis process, which generates pure hydrogen using no electricity and provides clean renewable fuel completely from the sun's heat.

Mr. Herman described the process by which water can be broken down by the processes of electrolysis and pyrolysis to create hydrogen. (See handout for details of this process.) As Mr. Herman further explained, plasma that is renewably generated to break apart water can be achieved almost anywhere, and JWI has figured out a means to create renewable hydrogen from

any type of water. The plasma arc reactor separates water into hydrogen and oxygen, with minimal power requirements as compared to hydrogen output, he said. He added that this process does not require high electricity rates, storage or transportation and can be accomplished in any gas station in America. Through this process, salt water can be desalinated 10 times faster off renewable energy for free. He pointed out that New Mexico has one of the largest saline bases in the country and that the state could generate as much fresh water as it wants from renewable energy for free. He stressed that even dirt or garbage could be thrown into the tank and plasma would break it down, causing hydrogen and oxygen to rise to the top, thus creating water from dirt and garbage.

Mr. Herman also spoke about JWI's visit to Lawrence Livermore National Laboratory (LLNL), where a process is being developed that uses high-energy lasers to vaporize nuclear materials at fusion temperatures. In theory, what this process could be used for is to create a nearly endless supply of energy while at the same time reducing the stockpile of nuclear waste, he said.

Mr. Herman said that a public-private partnership exists between JWI and the laser inertial fusion energy program (LIFE) at LLNL and that JWI could help to accelerate the time line. Since New Mexico has the Waste Isolation Pilot Plant facility and is already storing nuclear waste, why not start destroying it? He pointed out that the state could have an alternate revenue stream at a very high profit margin.

Questions and discussion by committee members addressed:

- storing hydrogen to provide continual power in a 100% emission-free plant;
- JWI's involvement in the LIFE program is that hydrogen is generated by JWI's dish to power the lasers;
- scalability and the cost of desalinization; and
- that even produced water from oil and gas can be treated when using plasma technology.

Adjournment

Before wrapping up, Senator Martinez alerted the committee members to a letter in their packets from Los Alamos National Laboratory that answers many of their questions from the July meeting. There being no further business, the committee adjourned at 3:10 p.m.

**MINUTES
of the
FOURTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**October 13, 2011
Pecos River Village Conference Center
Carlsbad**

The fourth meeting of the Radioactive and Hazardous Materials Committee (RHMC) was called to order at 10:04 a.m. by Representative Antonio Lujan, chair, on Thursday, October 13, at the Pecos River Village Conference Center in Carlsbad.

Present

Rep. Antonio Lujan, Chair
Rep. Thomas A. Anderson
Rep. Cathrynn N. Brown
Sen. Carroll H. Leavell
Sen. John Pinto
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler

Absent

Sen. Richard C. Martinez, Vice Chair
Sen. Vernon D. Asbill
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann
Sen. David Ulibarri

Advisory Members

Rep. Eliseo Lee Alcon
Rep. Donald E. Bratton
Rep. Jim W. Hall

Sen. Rod Adair
Sen. William F. Burt
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. Lynda M. Lovejoy
Sen. William H. Payne
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

Staff

Gordon Meeks
Renée Gregorio
Cassandra Jones

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file and/or posted on the web site.

Thursday, October 13

Representative Lujan announced that Secretary of Environment F. David Martin could not be in attendance because his wife was in a car accident that morning. The secretary has

agreed to be present at the RHMC's November meeting to answer any policy or technical questions at that time. Representative Lujan then turned the chairing of the meeting over to Representative Brown. She welcomed all to Carlsbad, and then she asked committee members to introduce themselves.

Greater Than Class C Radioactive Waste at the Waste Isolation Pilot Plant (WIPP)

Tom Kesterson, Department of Environment, took Secretary Martin's place and read the secretary's prepared statements to the committee on the disposal of greater than class C (GTCC) and "GTCC-like" waste that is currently being evaluated by the federal Department of Energy (DOE). The question of how this waste should be permanently disposed of is being considered, with WIPP being one of the suggested sites.

Although the Nuclear Regulatory Commission (NRC) rules say that GTCC waste needs to be disposed of with greater confinement than many disposal facilities offer, GTCC waste managed by the DOE is not defense-related waste, Mr. Kesterson said. Since WIPP is authorized for the disposal of only defense-related transuranic (TRU) waste, the GTCC waste is not eligible for disposal at WIPP, he explained.

He outlined the operations at WIPP, including regulations put in place by the Department of Environment, and stated that more than 10,000 shipments have been safely received at the WIPP facility. He also read the document on WIPP storage data, which concluded that WIPP is capable of permanently isolating the lower radioactivity GTCC waste from a storage volume and radioactivity level.

Questions and comments by committee members included:

- what will the nation do to store this waste once WIPP reaches capacity?; and
- what is the DOE's prediction for what happens in 10 or 20 years?

WIPP Update

Ed Ziemianski, interim manager, DOE Carlsbad Field Office, and Farok Sharif, president and general manager, URS Washington TRU Solutions, gave the committee a WIPP status update handout and summarized its contents. Mr. Ziemianski reviewed the WIPP team, whose biggest partner is Washington TRU Solutions. He said that the WIPP work force is diverse, which is fairly typical for its employee classification. It is also part of the mining industry, which has been around a lot longer than the nuclear industry. According to Mr. Ziemianski, Mr. Sharif helps to get these diverse cultures to blend. Mr. Ziemianski said that WIPP has a significant impact on the economics of southeast New Mexico, with a fiscal year 2011 budget of \$220 million, which is spent inside and outside of the state.

WIPP is the country's only deep geologic repository for the permanent disposal of TRU waste, which is radioactive waste left over from research and production of nuclear weapons, he testified. This waste is contaminated with isotopes with an atomic number greater than 92. The two kinds of waste are contact-handled and remote-handled. The former represents about 96 percent of the waste to be disposed at WIPP and does not require any shielding other than its container. Remote-handled waste is handled in certified casks. About four percent of the waste to be disposed of at WIPP is this kind.

WIPP's location was decided upon largely because of salt. The environment has a stable geology and lack of water, and the plastic quality of salt allows for it to close in on the waste. The panels where waste is stored were described by Mr. Ziemianski, which included those that are currently filled as well as those that are currently unfilled. He added that the transportation system at WIPP is very safe, and drivers are held to the highest standards.

Committee members asked, if WIPP runs out of space, which way would the facility go to expand and what is needed to do so? How is the site defined?

The answer was that panels 9 and 10 would be in the southern direction, but the WIPP facility is on 16 square miles and this is dead center. There is plenty of room to go in any direction and WIPP has not run out of room, Mr. Ziemianski said. Congress has established limits for the volume of waste that can be disposed and limits for the amount of activity for remote-handled waste.

Mr. Ziemianski said that the drivers have the discretion to decide on safety issues in transporting waste. Bill Mackie, institutional affairs manager, WIPP, added that WIPP drivers abide by National Weather Service watches and warnings and get off the road as needed.

Of the shipping containers, the TRUPACT-II is WIPP's real workhorse, he said.

Committee questions and comments included:

- configuration of the TRUPACT-II;
- vehicle capability to immobilize itself in place;
- can terrorists use waste transport to their advantage? (All vehicles have transponders on them that are connected by satellite to the monitoring areas. The central monitoring room is where the movement of waste is tracked, which can be viewed at four- or five-minute intervals. Notification can happen immediately to state and tribal entities if there is an accident. A user name and password is needed to get on to the system. Packages are all double contained. Even if a terrorist could get access to a package, the terrorist likely could not open it. There are also bolts everywhere. Waste transport does not carry nuclear weapons; rather, it transports clothing, tools and equipment tainted with nuclear contamination. A terrorist could not make "dirty bombs" with these materials. People should probably be more concerned with propane and gasoline trucks going through Santa Fe.);
- "we were taught to fear anything nuclear. Some of this fear is a vestige of those days"; and
- the major concern is public perceptions and public fear.

Mr. Ziemianski indicated that there have been more than 30,000 first responders trained since 1988. Also regarding safety, he said that the WIPP site has been part of the "Star" safety program, a voluntary protection program, since 1994. WIPP has received more than 10,000 shipments to date, he added, with some impacts on shipment such as weather and wildfires.

He reviewed the volume of waste disposed of at WIPP as over 78,000 cubic meters to date. The facility is 25 years old and it needs to stay in operation for another 25 years, he added. The Department of Environment's goal is to complete the disposition of 90 percent of legacy

TRU by 2015, he said. In looking ahead, Mr. Ziemianski said that there are budget challenges and the cleanup of Sandia National Laboratories is also a future project. He added that WIPP would like to have strong input on determining the nuclear future of this country and that maintaining community support is key.

Questions and comments from the committee included the following:

- GTCC waste has two different sets of regulations, but under the federal Energy Policy Act of 2005, the NRC was given regulatory responsibility for commercial waste. GTCC waste is DOE-owned and regulated. Physical characteristics of the two kinds of materials are almost identical. NRC/DOE rules are what differs, not the plutonium. The term was created to reinforce the similarity of this kind of waste;
- what legislation would have to be put in place to expand the purpose of WIPP;
- the Blue Ribbon Commission on America's Nuclear Future is interested in looking at WIPP as a solution for large volumes of commercial waste, and there is a lot of support for this in southeast New Mexico;
- there are plans for the chemistry and metallurgy research replacement building in Los Alamos to have a 50-year life expectancy compared to the WIPP scheduled closure in 2030;
- the amount of money that has been invested in this project over its life; and
- there are more than 1,000 employees at WIPP.

Mr. Mackie gave the committee a handout and spoke on the routing update. He said transportation system safety is the main goal. WIPP has two transportation contractors with 60 total drivers. The Transcom system is a defense system that meets all necessary requirements. All trucks have three different systems in place to track trucks at all times. He indicated that there have been a lot of public meetings on the routing around the brine well in Carlsbad that is feared may become a sinkhole. He showed the alternate Texas route in his handout that comes out of Big Spring, Texas, to the state line at Eunice. This request was submitted to the State of Texas, public hearings have been held and Texas is currently preparing a letter to recommend that there be a WIPP route change. This will save approximately 90 miles one way. Mr. Mackie said that all necessary letters and approvals should be in place by the end of this year. WIPP has also requested from the State of New Mexico approval of route changes. Some of the route changes need to be made so that the north access road can be reconstructed, he said.

On the New Mexico side of things, WIPP met with Secretary of Transportation Alvin C. Dominguez to request route changes in August, he said. WIPP was recently told that the Department of Transportation (DOT) would not take action because of congressional issues around an unresolved issue with the funds appropriated through Congress. Mr. Mackie indicated that WIPP is in limbo now regarding these decisions. Once the funding problem is solved with DOE headquarters and Congress, the route changes will still take six months to nine months to get through the approval process.

Questions and comments from committee members included:

- a truck hit by a train;
- verbal approval to use NM 31 to 128, but that approval ends this year;

- did the DOT indicate why it would take so long?;
- the state loss of federal funding this year; and
- the committee approval (by motion) of a request that the DOT be invited to the next meeting (November 16), which passed unanimously.

Mr. Mackie told the committee that in the afternoon, three trucks will be on hand with three different packages on them. Two inspectors will demonstrate a level 6 inspection on the TRUPACT-III. Before vehicles can move, they must be defect free.

The committee approved the minutes from the August 15 meeting.

Carlsbad Environmental Monitoring and Research Center

George Mulholland, interim director of the Carlsbad Environmental Monitoring and Research Center (CEMRC), New Mexico State University, who said he came out of retirement to take his interim position, announced that Russell Hardy will assume the directorship in January 2012. He lauded Mr. Hardy as a good listener and as someone totally prepared to do an excellent job in his new position. He requested that the committee include the CEMRC on its agenda next year and offered the idea of doing a tour there.

He said that the CEMRC is a world-class facility in environmental monitoring. The organization provides objective environmental monitoring, conducts research, provides training, develops measurement methods and establishes a health environmental database, Mr. Hardy's handout explained. Mr. Mulholland praised the DOE for its advocacy of measuring methods established at the CEMRC. The organization also has a solid reputation worldwide, he added. The research effort, although not as strong in the past few years, is being beefed up in biology research, evaluating cell growth in environments with less radiation in its background. The CEMRC is also conducting chemistry research by measuring volatile organic compounds from WIPP, which he said is very safe. One of the questions the CEMRC is addressing is how background radiation affects vegetation. The question of anything being released from the WIPP site was assessed, and the CEMRC concluded that there has been nothing emitted from the WIPP site. He said that if anyone wants a copy of the CEMRC's annual report, it will be provided.

The CEMRC is an expensive venture, and it needs finances for equipment and for hiring additional staff.

Questions and comments from committee members included that the CEMRC took data on background radioactivity before any waste was introduced.

Carlsbad Brine Well Update

Jami Bailey, director, Oil Conservation Division (OCD), Energy, Minerals and Natural Resources Department (EMNRD), and Jim Griswold, senior hydrologist, EMNRD, presented next on the Carlsbad brine well. Mr. Griswold manages the class 3 brine wells, he said. His PowerPoint presentation showed a map of New Mexico and West Texas reserves of oil and gas. Overlying these reserves are significant areas of salt, which provides value to the potash industry, he explained. As one moves west to east, the salt gets thicker and deeper, as deep as 2,000 feet in the Hobbs area. Brine is used to mitigate drawdown pressures, he explained. Brine wells are

solution mining operations that dissolve salt to make brine (salt-saturated water). He showed brine well configurations that include single or two-well operations. There are 32 historically permitted brine wells in New Mexico. He provided a map showing their locations. Active and inactive facilities were shown, as well as collapsed wells. He explained that the Jal sinkhole was associated with water flooding. There is only the Mesquite operation in Otis that has a yellow dot.

He said that brine operations were historically owned by trucking companies. Statewide brine production for the last one and one-half years is increasing. Enforcement mechanisms protect brine water. Factors affecting stability are: the depth to the top of salt; the width of caverns; the strength of roof material; and the percentage of liquid in caverns.

On July 16, 2008, the OCD got a call from a brine operator, Jim's Water Service, asking what it would take to get a new brine well permit. It is a relatively straightforward process, Mr. Griswold said. The operator indicated that it had lost a well, i.e., a brine well had collapsed. Fresh water for brine-making was coming into the collapsed cavern. Within minutes, a sinkhole opened up like an earthquake. The sinkhole grew to a diameter of 400 feet within months, and numerous concentric fractures appeared around the sinkhole itself. The site is on state trust land; otherwise, it is used only for grazing. The site is being monitored regularly. What precipitated the collapse is still not known, but the hope is that this was an isolated event.

There was another event at Loco Hills. This facility produced at least eight million barrels of brine. In November 2008, an operator thought he saw a dust devil, but he realized soon that it was a collapse. On November 14, a moratorium was placed on new brine well permits. The OCD sought help from experts across the state to determine what was going on. In this case, the road west of the facility showed a lot of cracking, as in the previous sinkhole. A slab of concrete at the facility also cracked. The sinkhole was backfilled, which took over a million cubic yards to fill. There was another collapse in Denver City, Texas, within a year of the earlier collapses in New Mexico.

The best current hypothesis about how caverns look below the surface is that a morning-glory-shaped cavern develops that is laterally extensive. When the cavern fails, there is a central sinkhole and then fracturing around it, Mr. Griswold said.

The OCD became very concerned with operations in Carlsbad. There are shallow salt beds, lots of brine production and a good-sized cavern in Carlsbad. The well in Carlsbad was plugged. The locale includes the Carlsbad Irrigation District canal, a church, a feedstore, a truck stop, a trailer park and convenience stores. The OCD held a meeting in March 2009 to talk about brine wells in general, and many people in attendance were from Carlsbad. Recommendations made to the OCD then, from a public safety point of view, demanded that something be done. Action was taken to remove trucks and personnel from the facility, and the OCD began monitoring the situation. This monitoring has included surface subsidence measurements, tilt plate measurements and establishment of an early warning system. He said that data from borehole tiltmeters show continual movement. In August 2009, a survey was completed showing where salt has been removed. During the budget crisis, the OCD's funding was swept into the

general fund. Since then, the City of Carlsbad stepped up to maintain the early warning and monitoring systems.

In December 2009, the owners of a feedstore filed suit for loss of property. The City of Carlsbad filed suit to pay for monitoring. In March 2010, Governor Richardson signed legislation to increase revenues from oil and gas to be used on efforts such as this. The brine well was reentered to do sonar logging of its interior. Mr. Griswold showed the results of sonar logging on a graph. Cavern pressure monitoring shows continuous incline and that the cavern is not stable. The OCD hired the Cave and Karst Institute to look into this. He showed a graphic representation of an area shaded in red (full of brine) and an orange area, indicating fractured overburden, possibly, where water can come up.

Questions and comments from committee members included:

- an increase on the oil and gas severance tax;
- additional wording in that statute to keep that funding separate for this purpose;
- the status of the initial operator (bankrupt);
- the estimated cost of trying to deal with this problem (the OCD spent \$750,000; the City of Carlsbad spent \$1.7 million);
- who decided to plug the well initially;
- the need for statewide perspective on this;
- examples to learn from in other parts of the world;
- has the legal process run its course?;
- new permit applications for new brine wells in the state;
- bonding for any company desiring a permit for brine wells and new methodology for water and casing chutes; and
- water tables falling in the Ogallala Aquifer.

Comments and Questions from the Audience

An audience participant asked if the brine well collapses, could mitigation funds be used to stock it with bass?

National Enrichment Facility Status

Gregory Smith, chief executive officer, Louisiana Energy Services (LES), and Brenda Brooks, director of community affairs, LES, gave an overview of Urenco's vision and mission, a company dedicated and devoted to nuclear energy as a great means of making electricity. He said the company takes safety very seriously, and its record proves this with all its awards received for safety performance. He said that the company indoctrinates everyone who comes onto its site. He reviewed the corporation's number of employees, construction staff, facility worth and payroll. Much has been expanded and improved over the past several years, he added.

Construction updates include improvements to electrical distribution and the addition of several new facilities. A building was named for former Senator Pete Domenici because he is the reason Urenco came to New Mexico, Mr. Smith said. Phase 2 construction has begun as well, with the first centrifuge planned to go online in June of next year. Phase 3 construction will begin in the design stage next year, after board approval, he added.

The plant will be brought online after the NRC establishes monitoring and inspection. Over a 32-week time period, the plant was reviewed for qualifications and safety, he said. The plant has produced 103 tons of material, which consists of 14 cylinders of product. It will double this capacity by the year's end. Mr. Smith explained some of the technical aspects of the process and the uranium product stream.

Mr. Smith said that his company considers it a privilege to operate in Eunice and the company is committed to ensuring that the community feels comfortable and safe.

Questions and comments from committee members included:

- tax revenues from the business;
- International Isotopes coming to southeast New Mexico because of Urenco;
- Isotopes will have 100 employees, Urenco has 368 employees and there are 1,000 construction workers;
- the Isotopes plant taking the waste generated from Urenco;
- accountability;
- the owner of materials;
- if bankruptcy occurs, who would clean up the mess and how much would it cost? (decommissioning fund);
- any use for a waste repository such as WIPP;
- validation of the product and material;
- the price of uranium;
- fuel rod production in Washington State;
- concerns over nuclear energy waste;
- the need for a national energy policy; and
- reprocessing feed stock from within or from foreign countries.

TRUPACT-III Exhibit and Simulated Inspection

The meeting adjourned at 4:30 p.m., and most members went to the parking lot to see the transportation equipment and to watch a simulated inspection.

**MINUTES
of the
FIFTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**November 16, 2011
Room 321, State Capitol
Santa Fe**

D The fifth meeting of the Radioactive and Hazardous Materials Committee was called to order at 10:15 a.m. by Representative Antonio Lujan, chair, on Wednesday, November 16, in Room 321 at the State Capitol.

Present

Rep. Antonio Lujan, Chair
Rep. Thomas A. Anderson
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann
Sen. Carroll H. Leavell
Rep. Jim R. Trujillo

Absent

Sen. Richard C. Martinez, Vice Chair
Sen. Vernon D. Asbill
Rep. Cathrynn N. Brown
Sen. John Pinto
Rep. Shirley A. Tyler
Sen. David Ulibarri

Advisory Members

Rep. Eliseo Lee Alcon
Rep. Donald E. Bratton
Rep. Jim W. Hall
Sen. Lynda M. Lovejoy
Sen. Nancy Rodriguez

A
Sen. Rod Adair
Sen. William F. Burt
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. William H. Payne
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

Staff

Renée Gregorio
Cassandra Jones
Gordon Meeks

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file and/or posted on the web site.

Wednesday, November 16

Waste Isolation Pilot Plant (WIPP) Transportation Route Change

Alvin Dominguez, secretary of transportation, and Todd C. Wilson, state risk manager, Risk Management Bureau, Department of Transportation (DOT), updated the committee on WIPP route changes. Secretary Dominguez indicated that a 15-year grant agreement from the

federal Department of Energy (DOE) expired in September, and the DOT sent a letter requesting additional funding of \$998 million for the next 15 years. He said that the original WIPP routes are in need of repair, and with the current agency shortfalls and deficiencies in the state's highways, the WIPP route could quickly deteriorate. The DOT's executive summary backs up his concerns and delineates the original WIPP routes as well as those proposed for repair.

Secretary Dominguez referred to another handout, in which the proposed southern route through Texas and the proposed northern route were indicated. He added that these routes first need consideration, then approval, from the State Transportation Commission, which would be meeting the next day in Fort Sumner. He stated that the DOT personnel have driven the routes, feel comfortable with the alternate routes and are recommending a temporary approval for a year, with the hope that the DOE could assist the DOT with funding at a later date. Funding would allow the DOT to make these alternate routes permanent. He added that the commission would vote on the actual approval at its January meeting in Santa Fe.

Committee questions, comments and responses included:

- concern over the state "holding the federal government hostage" for more money after the federal government has already completed funding for much of the cost for WIPP's high-quality roads;
- that the DOT stated that the money would be used for preventive maintenance of WIPP routes;
- how decisions are made for the chosen routes and how much leeway drivers have to make a decision about what route to take;
- that drivers must take preapproved routes;
- that all shipments are monitored by state police by satellite;
- what the situation is in Carlsbad regarding the sinkhole and clarification about routing around this area;
- that the final inspection of trucks before they make the final turn into WIPP has been discontinued;
- that, originally, the alternate routes were not in good shape, but the DOT has spent a lot of money to upgrade them; and
- the safety of Highway 599 as a WIPP route and clarification on which interchange is being upgraded.

Greater-Than-Class C (GTCC) Radioactive Waste at WIPP and Los Alamos National Laboratory (LANL) Legacy Waste Cleanup

F. David Martin, secretary of environment, reported on both topics to the committee. He stated that WIPP is the only operating deep-geologic repository in the U.S. for transuranic (TRU) wastes. He reviewed permitting time lines for WIPP as well as the key components of WIPP's success, stressing its collaborative approach to problem solving, credibility of its scientific framework and the support of local communities. He spoke of WIPP's economic impact in New Mexico, which includes adding 1,500 well-paying jobs to the mix and improving the state's highways. He also said that WIPP has created an environment in southeastern New Mexico that welcomes the nuclear industry to the state, as evidenced by URENCO and International Isotopes both locating here. He indicated that the final report from the blue ribbon commission will be issued the first part of next year.

In terms of storage at WIPP, Secretary Martin said that the site is about 50% full. As of early October of this year, there are over 78,000 cubic feet of defense-related TRU waste disposed of at the site. He said that over 10,000 shipments have been safely placed at WIPP. In further discussion, the secretary indicated that there is GTCC waste, which is low-level radioactive waste, most of which is not generated by defense-related activities, that could be stored at WIPP in the future, but this would require revisions to the federal WIPP Land Withdrawal Act, which limits WIPP disposal to include only defense-related waste. The total inventory of GTCC waste is 11,600 cubic meters, he reported, of which a small fraction contains the majority of the radioactivity. In summarizing, Secretary Martin indicated that WIPP is capable of isolating the GTCC waste from a storage volume and radioactivity level perspective. He reiterated that WIPP is a strong model for America's nuclear future, one that is based on safety, compliance, good citizenship and sustainable economic growth.

In updating the committee on LANL's legacy waste cleanup, Secretary Martin said that the Department of Environment (NMED) is working with the federal DOE to accelerate legacy waste cleanup at LANL. He gave an overview of what contamination exists, which includes the identification of over 2,100 sites, some of which require further investigation. Contamination has been found in the shallow subsurface at many LANL sites as well as in the canyon near LANL property. In addition, tritium and volatile organic compounds have been found beneath several material disposal areas at LANL, and contamination in ground water at LANL has been detected.

Secretary Martin reviewed accomplishments made under the consent order of 2005. He reported that the NMED has issued certificates of completion for cleanup of about 160 legacy sites, actions have been taken to reduce the transport of sediment during floods and the ground water monitoring network is nearly completed. He added that the NMED has told the DOE and the National Nuclear Security Administration (NNSA) to prioritize TRU waste removal from Area G at LANL. He said that ground water protection and protection of Rio Grande water quality as related to the Buckman Diversion Project are both primary concerns.

He stated that the NMED is working with the appropriate officials at other agencies to revise the cleanup schedule so that the highest-risk projects can be completed first. He clarified that the NMED is not renegotiating the consent order, but it is really only making scheduling changes to that order. He expressed concern over proposed operating budget decreases for both LANL and WIPP, which could jeopardize the department's ability to comply with the order as well as jeopardize jobs at WIPP. The secretary said that LANL needs at least \$250 million annually for cleanup, and that WIPP's baseline funding needs are at \$228 million.

Secretary Martin asked Ryan Flynn, Jim Davis and Frank Marcinowski to join him for committee questions.

Committee questions, comments and responses included:

- concern over whether, geologically or technically, there is anything to prevent WIPP from "becoming another Yucca Mountain";
- that there is no intent for WIPP to be considered as a site such as Yucca Mountain, as WIPP's TRU mission has been successful and there is still a significant inventory of TRU waste that needs to be disposed of;

- whether it is prudent to wait and see what the blue ribbon commission concludes before contemplating the next steps for WIPP;
- what the total cost is for all legacy cleanup;
- the consent order was conceived as a document to secure funding for cleanup, but there are not any causes for action if the federal government does not appropriate money to implement such cleanup;
- there is GTCC waste stored at Los Alamos;
- reports can be delivered to the committee that deal with findings of citizens' advisory groups and other oversight groups;
- GTCC waste is in fact similar to waste shipped to WIPP now; and
- the priorities for cleaning up Area G as related to the consent order.

Hydraulic Fracturing

Dr. Tom Engler, chair of the Petroleum Engineering Department and dean of engineering at the New Mexico Institute of Mining and Technology (NMIMT), and Dr. Daniel Lopez, president, NMIMT, gave a presentation on hydraulic fracturing (fracking), with the caveat given by Dr. Lopez that the NMIMT does not take a position on fracking, but that it wants to bring forward the science behind it. He said that fracking is about 60 years old, so it is not a new process. He reported that about one million wells have been fracked, and there have been only two properly documented, defensible examples of contamination.

Dr. Engler gave some background on and a definition of fracking, which is essentially injecting water and sand under high pressure into a rock formation, creating fissures in the rock that allow for a passageway for oil and gas to flow to the wellbore. He said that fracking is very commonplace today. This is done thousands of feet underground, he added. He explained that when a rock is fracked, it is cracked based on the existing chemical properties of the rock. He pointed to diagrams in the handout that show how a rock fractures and how an opening is first created and then maintained. He also spoke of the well construction, where each well is encased in many layers of steel and each casing is surrounded by cement, which ensures the containment and protection of fresh water.

Committee questions, comments and responses included:

- review of the controversy about fracking, especially the Duke University study, which showed that carcinogens were found in wells where fracking has occurred as well as a higher methane content;
- what the source of the contamination actually is;
- request for an offline discussion of these different studies to evaluate what they are saying about fracking;
- a distrust expressed about this method and questions regarding disclosure laws that are in place as well as safety issues around fracking;
- concern about poorly drilled wells;
- if regulations have kept up with the technology for fracking;
- in fracking, one-third of the water does not come back, and the two-thirds of water that comes back has to be recycled;
- fracking is done to increase oil and gas production;
- fracking has been done in tight sand and in water wells to increase permeability;

- people have to be educated about fracking because it can be done safely, but it can be dangerous because of the high pressure involved; and
- that safety concerns are paramount.

Fire Impact Update

Pete Maggiore, deputy assistant manager, Environmental Projects Office, NNSA, reviewed the effects of the Las Conchas fire, the responses by local and state officials and teams and the impacts on LANL. He reiterated that the federal, state and local interaction was superb and decisions were made quickly to alleviate fire damage. He stated that all air sampling done during the fire showed there were no LANL contaminants present. He reviewed initiatives taken after the fire, which included protection of infrastructure, removal of materials, safety measures and monitoring of air, water and biota. Photographs in the handout provided show barriers erected to block flood water, the sealing of well heads on ground water monitoring wells, the cleaning of water catchment systems, the removal of sediment from Los Alamos Canyon and the baseline sampling done by biologists at Cochiti Lake before and after the fire. He spoke of the regional monitoring efforts under way by several agencies as well as LANL's goals for evaluating contamination and taking action to mitigate risks and repair damage. He gave an overview of the results from storm water monitoring after the fire, which indicated that the presence of cyanide, dioxins, metals, radionuclides and PCBs is consistent with observations from other fire sites. He told committee members that results could be viewed at the RACER web site (<http://racernm.com>).

Committee questions, comments and responses included:

- if there was evidence of lab-produced contaminants after the fire, to which LANL said no;
- how funding of \$330 million received by LANL for the Cerro Grande fire affected the response and impact of the Las Conchas fire;
- clarification on the squirrel-generated fire on LANL property;
- capability of the Buckman filtering system to handle ash and associated costs; and
- oversight of LANL's environmental programs.

Concerned Citizens for Nuclear Safety (CCNS) Statement

Joni Arends, executive director, CCNS, began by speaking about the formation of CCNS, which was due to concerns for safety in the transportation of nuclear waste to WIPP. She said that CCNS was a plaintiff in 1991 alongside the state and the Southwest Research and Information Center in opposing the opening of the WIPP site; as a result of those delays, WIPP is now a safer facility. She said that her organization is also involved in the hazardous waste permitting process for LANL. She added that CCNS responded to community concerns regarding the fires in the state.

Ms. Arends refuted what was said by representatives from LANL. To begin with, she indicated PCB contamination was severe, and that the cleanup done by LANL was done because of the work of CCNS. This work included removal of high levels of PCBs in canyon walls, she said. Also, she stated that PCBs are from operations during the Manhattan Project, not from global fallout.

She reported that CCNS is pleased at the actions of the DOE in looking at changing the WIPP route to avoid the sinkhole issues in Carlsbad. She said that CCNS has ongoing concerns about waste from LANL, and that multiple trucks are traveling in caravans with waste. She added that CCNS's concern is related to the fact that a risk analysis has not been done.

Regarding the disposal of GTCC waste at WIPP or LANL, Ms. Arends stated that at the scheduled closure of WIPP in 2033, when it will be filled with TRU waste, there will be about three million curies in the TRU waste, which represents more than 50 times less radioactivity than there would be in the GTCC waste. She reiterated that the people of New Mexico have been told many times that WIPP would be only for defense waste, not commercial waste, and added that two federal laws prohibit the disposal of such waste at WIPP. She said that although LANL is a proposed site for GTCC waste, it is not an appropriate one as LANL already has about 21 million cubic feet of waste that has to be cleaned up. She stated that the recommendation from CCNS is that the DOE should not consider any sites in New Mexico as reasonable for the disposal of commercial GTCC waste.

Regarding the cleanup of LANL's legacy waste, Ms. Arends highlighted seismic activities and issues in the Pajarito Plateau and the Rio Grande. She stated that Area G is a particular concern for CCNS and the public, especially in relationship to the Buckman well field, which provides Santa Fe with approximately 40% of its drinking water. She expressed concern over the proposed cleanup of Area G, mainly in relationship to inflated cost estimates that predetermine the use of a "cap and cover", or as she named it, a "hide and hope" solution.

Committee questions, comments and responses included:

- what Ms. Arends presented differed vastly from what LANL presented, and LANL staff stated that they would be happy to come back to the committee to give a broader view of what it is doing;
- whether PCBs came from lab operations or can be traced back to the Manhattan Project area wastewater plant;
- GTCC waste has to be transported in shielded containers per the DOE;
- analysis of seismic risk at LANL; and
- a request from committee members to tour Area G, which LANL responded to positively.

Public Comments

Sister Joan Brown, executive director of New Mexico Power and Life, spoke to the issue of fracking from a moral perspective. She looks at water as a gift that needs to be protected. She said that at this point, the federal Environmental Protection Agency (EPA) does not regulate fracking and that it is excluded from the federal Clean Water Act. She added that the EPA is researching the effects of fracking on drinking water and that this will be available in 2014. She stated that her organization recommends an effective regulatory structure to protect water and air. She added that there have been over 1,000 cases where drinking water has been affected by fracking and that there is a case in court now in Pennsylvania related to a fracking accident that polluted water there. She insisted on disclosure of the composition and safety of chemicals used in fracking, the development and use of drilling company best practice standards and a ban on natural gas drilling in environmentally sensitive areas.

Eleanor Bravo of the Food and Water Watch Organization stated that she supports clean water and safe food for all people. She said that shale gas production has increased and that the oil and gas industry has lobbied for fracking. She passed out handouts to the committee on the safety of water in the Rio Grande and on a ban on gas fracking.

Scott Kovak from Nuclear Watch New Mexico said that there is an aquifer at 900 to 1,000 feet below Area G. He stated that his organization believes that a modification to the consent order of the magnitude discussed by the NMED, which is to modify a deliverable to the consent order by adding a two-year time extension, cuts a two-year gap into all the deliverables of that order and therefore is a major modification.

Reverend Holly Beaumont encouraged committee members to tour Area G because it is startling to be on that site and see what LANL says is adequate containment. She advocated support for nuclear disarmament rather than building a new generation of weapons. She said that there are grassroots organizations on limited funds battling Bechtel, which now operates LANL as a for-profit corporation. She added that Bechtel is recognized for mismanagement and abandoning projects. She concluded by saying that people live in a post-Fukushima world and cannot put their trust in the reputation of LANL.

Jeff Genauer, a student at Northern New Mexico Community College (NNMCC), expressed concern about hydraulic fracking. He announced that NNMCC in Espanola would be presenting a film about fracking. He added that there is not enough water in New Mexico to risk contamination and that there is the question of whether fracking increases the rate of earthquakes. He ended by saying that he witnessed the Las Conchas fire and he evacuated, but with all the focus on protecting Los Alamos, there was not protection for the Pueblo of Santa Clara.

Marianne Naranjo, Pueblo of Santa Clara, spoke passionately about the fact that the Jemez Mountains are the pueblo's homeland. She said that since the Manhattan Project, great disasters and traumatic changes have happened in her culture. She said pueblo culture supports and represents life, and these projects cut life in half to destroy things. She questioned where her people are headed with the fires as well as a continuing fear of Los Alamos as a neighbor. She said that Mother Earth is cleaning herself and that people need to pay attention. She ended by saying that people do not even know what to do with the waste that has already been created.

Michelle Dumond, a Santa Fe resident for four years, said that she is questioning whether Santa Fe is any longer a good place to live because of the monumental nature of the issues the city is facing, especially related to nuclear waste. She said that LANL is no longer what it was a decade ago because it is now run by a corporation that has a very bad track record. She sees the nature of what residents are faced with as catastrophic, and to consider storing more waste in an unpredictable environment with potential for more fires and accidents is untenable. She also stated that to embrace hydraulic fracturing in a state with such a lack of water is foolhardy at best.

Adjournment

There being no further business, the committee adjourned at 5:15 p.m.